

Application Number 09/714,325

Amendment dated November 1, 2004

Reply to Office Action of June 3, 2004 and Advisory Action of October 12, 2004

Amendments to the Specification:

Please amend the paragraph at page 6 lines 8 through 12 as follows:

In Fig. 5, in accordance with the invention, an address trace cache 220 is composed of a start address for storing an address where each routine is started, an end address for an address where each routine is finished, a current loop iteration [[loop]] counter for ~~counting the iterations~~ a generating a current iteration count of a corresponding routine to ~~generate a current iteration count~~, and a total loop iteration ~~loop-counter count~~ count for indicating total number of iterations of the routine. That is, the total loop iteration count is a stored value indicating the total number of iterations of the routine to be executed.

Please amend the paragraph at page 6, lines 13 through 20 as follows:

For example, if the information of instructions executed in routine 1 is indicated the address trace cache 220, the start address and the end address of routine 1 are stored in the trace cache 220. Then, current iteration count of routine 1 is stored in the current iteration loop counter while total number of iterations (e.g., 30 times) of routine 1 is stored in the total loop iteration ~~loop-counter count~~. As execution of the routine is repeated, a value of the current loop iteration [[loop]] counter is increased. If the value of the current loop iteration [[loop]] counter is identical to that of the total loop iteration ~~loop-counter count~~, routine 1 is finished and a start address of routine 2 is stored as a next fetch point (NFP).

Please amend the paragraph at page 6 line 27 through page 7 line 4 as follows:

Referring now to Fig. 6, if, for example, a routine 1 shown in Fig. 3 is stored in the address trace cache 220, an address of an initially executed instruction A is stored into a start address of routine 1 while an address of a finally executed instruction B is stored into an end address thereof. Since the total number of iterations or repetitions of the routine 1 is 30, the value of the total loop iteration ~~loop-counter count~~ count is stored as 30. Whenever routine 1 is

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repeatedly carried out, a value of the current loop iteration [[loop]] counter increases by 1. In the same manner, information of routines 2 and 3 is stored in the address cache 220.

Please amend the paragraph at page 7 lines 5 through 12 as follows:

As shown in Fig. 6, since the address cache 220 is composed of an address where each routine is started, an address where each routine is finished, a current loop iteration [[loop]] counter, and a total loop iteration counter, only four data storing areas are required to store information of a repeated routine. Therefore, a total of 12 data storing areas are required to store routines 1 through 3 in the address trace cache 220. In this case, if 32 bits are utilized to store each piece of information, a total of 384 bits (i.e., 48 bytes) are required to store routines 1 through 3. This is smaller by about 16.7 times than a data storing area utilized in a conventional trace cache.